

## THE HAIR TRACTS IN MARSUPIALS.

## PART III. DESCRIPTION OF SPECIES, CONCLUDED.

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(Two Text-figures.)

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## INTRODUCTION.

The marsupial pouch young, all from Western Australia, which form the subject of this communication are part of the collection of the Western Australian Museum, Perth. I am very appreciative of the kindness of Mr. L. Glauert, Curator of the Museum, who made available to me both the specimens and his knowledge of marsupials.

Suborder POLYPROTODONTIA.

Family DASYURIDAE.

Subfamily PHASCOGALINAE.

PHASCOGALE, sp.\*

*Material*.—M.2407-9—three males (length of head and body about 37 mm.), young of M.2406; Woolleen Station, Murchison District; coll. B. H. Sharpe, 28th March, 1940.

Hair tract pattern as recorded for *Dasyercus cristicauda* (Boardman, 1946*a*) is repeated in this species. The forearm reversal enters into the formation of a convergent point placed postaxially about a third or more of the length of the forearm from the elbow. A triangular area in front of the scrotal stalk similar to that which, in *Dasyercus* and *Antechinus* is the site of a reversal, is sparsely provided with hairs of indeterminate inclination. However, the general arrangement of the tracts in the vicinity of the scrotum points to the development of a typical prescrotal reversal in older specimens.

## SMINTHOPSIS CRASSICAUDATA CRASSICAUDATA Gould.

*Material*.—Seven males and five females, probably constituting two litters (crown-rump length about 17 mm.); Western Australia.

As with the subspecies *macrura* (Boardman, 1943*b*) and *centralis* (Boardman, 1946*a*), the hair tracts are similar in pattern to those of *Antechinus maculatus*.

## Family MYRMECOBIDAE.

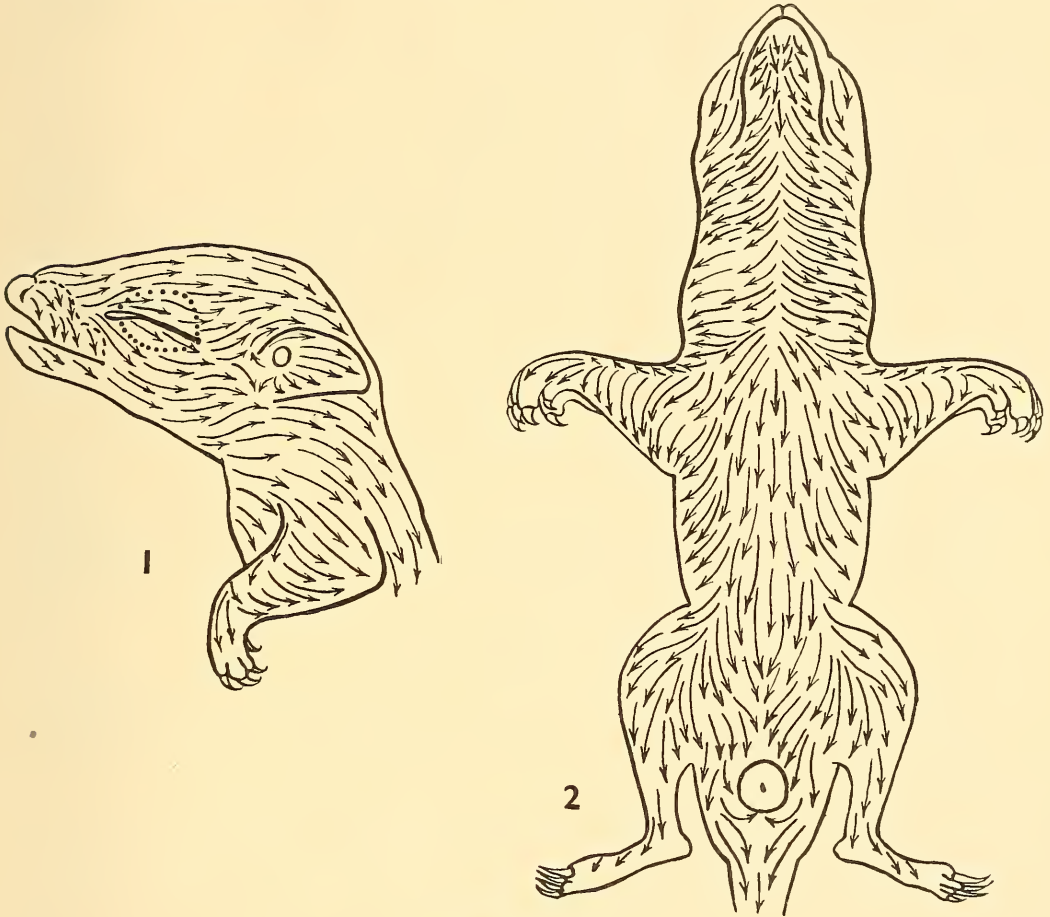
MYRMECOBIUS FASCIATUS Waterhouse. Text-figs. 1 and 2.

*Material*.—M.2495-8—a litter consisting of two males and two females (crown-rump length about 35 mm.); Pardelup Prison Farm; pres. J. A. Thompson, 28th July, 1941. M.2587-90—a litter consisting of a single male and three females (crown-rump length about 42 mm.); Narrogin; pres. J. E. Higham, 19th July, 1943. M.1161-4—a litter consisting of a single male and three females (length of head and body 71 mm.); The Williams, Williams River; coll. 18th July, 1929. M.1868—a male (crown-rump length 53 mm.); South Dale; pres. Miss Eva Wills, 30th August, 1934. M.2432-5—a litter consisting of two males and two females (crown-rump length about 42 mm.); Wagin; pres. H. S. Goldsmith, 22nd June, 1930. M.2226-9—a litter consisting of three males and one female (crown-rump length 29 mm.); The Williams, Williams River; coll. 21st May, 1937.

Wood Jones (1923) has recorded the general arrangement of the hair tracts in *Myrmecobius*. Examination of this very fine additional material confirms the original account and makes possible its extension particularly with reference to the side of the head and the ventral surface.

\* Mr. Glauert informs me that the species is new.

*Head and Neck.*—Dorsally the flow is caudalwards. On the side of the head the general direction is also caudalwards, except between the eye and the ear where a preauricular reversal occurs, resulting in the formation of a divergent interval (obscured by the stronger growth of the caudally flowing hairs in older specimens). The preauricular reversal originates in a divergent centre on the tragus. A backwardly directed feathering reminiscent of that described in the monotreme *Tachyglossus aculeatus* (Boardman, 1946*b*) is present in front of the medial canthus; its axis



Text-figures 1 and 2.

Figs. 1 and 2.—*Myrmecobius fasciatus*. 1. Lateral view of head, neck and forelimb. The broken line indicates the caudal margin of the mystacial zone and the dotted line the orbital ring. 2. Ventral aspect. The circle in front of the root of the tail marks the position of the cloacal hillock.

makes an obtuse angle with the palpebral fissure. The origin of the feathering is in what appears to be a divergent centre imperfect in that hairs do not stream forward from it and situated on the caudal margin of the mystacial zone. Most of the specimens have a similar but less definite parting in the mid-dorsal line immediately behind the margin of the rhinarium. Between the mandibles the hair flows cranio-caudally, but from a level somewhat in front of the angles of the mouth divergence from the middle line initiates a caudodorsal current on the ventral aspect of the head and neck. Laterally on the head beneath the eye and the ear and laterally or dorso-laterally on the neck this diverging current merges insensibly with the general caudalwards stream; further back it flows over the shoulder and upper arm.

*Trunk.*—The tendency for the ventral hair current on the head and neck to diverge from the middle line is continued on the trunk, so that laterally between the attachment of the fore- and hind-limbs it follows a curved course dorsally and caudally to merge with the caudalwards stream on the dorsum. In the female inguinal region the primitive caudoventral arrangement is not interrupted by the presence of the pouch. In the male a prescrotal triangle of reversed hairs is found as in the Dasyuridae; the hair field delimited by the triangle contains hairs having a craniomedial direction.

*Limbs.*—The forearm has a well-defined reversal postaxially with the convergent point (occasionally not well developed) at the elbow or placed more proximally on the arm. The hind-limb shows the undisturbed primitive condition.

#### Family PERAMELIDAE.

##### PERAMELES sp.

*Material.*—10457-9—three females, probably litter mates (length of head and body 142 mm.); Napier Broome Bay; coll. G. F. Hill, 26th Feb., 1910.

This undetermined species of *Perameles* is similar to *P. nasuta* (Boardman, 1943*a* and 1943*b*). All three specimens have the gular whorled system single—in two on the left side and clockwise, in the third on the right side and counter-clockwise.

A forearm reversal of the usual type, that is, postaxial and with the convergent point distal of the elbow, is present in only two of the three specimens.

#### Suborder DIPROTODONTIA.

##### Family PHALANGERIDAE.

##### Subfamily TARSIPEDINAE.

##### TARSIPES SPENSERAE Gray.

*Material.*—M.1888—a female (crown-rump length about 26 mm.); Youngs; pres. M. Kittner, 26th November, 1934.

A single well-preserved specimen that confirms the previous account (Boardman, 1943*b*). The submental hairs flow cranially and medially.

##### Subfamily PHALANGERINAE.

##### CERCARTETUS CONCINNUS Gould.

*Material.*—M.2638—a male (crown-rump length 24 mm.); Katanning; pres. W. Folland, 7th September, 1944.

No significant differences could be detected from *Cercartetus nanus* (Boardman, 1946*a*).

##### TRICHOSURUS VULPECULA HYPOLEUCUS Wagner.

*Material.*—M.224—a female (length of head and body 180 mm.); Margaret River District; coll. L. Glauert, 20th April, 1915. M.1422—a female (length of head and body 197 mm.); Claremont; pres. J. E. Payne, 11th August, 1931.

A previous account (Boardman, 1946*a*) of this subspecies based on a single female at an early stage of hair growth is confirmed. The divergent system on the dorsal aspect of the head is whorled counter-clockwise. The condition of the tracts in the female inguinal region is, from an examination of M.224, similar to what has been figured for the male of the subspecies *vulpecula* (Boardman, 1946*a*, Fig. 20) except that the mid-ventral tuft is not whorled and there is no equivalent of the convergence on the scrotal stalk; the convergent interval associated with the mid-ventral tuft lies in the middle line on the margin of the pouch fold. Specimen M.1422, in which the hair is much longer, at first sight appears not to have a mid-ventral tuft. There is, however, a convergent interval on the lip of the pouch in the middle line as in M.224 but the cranially flowing current from it is almost immediately taken up in a pair of centripetal whorls (clockwise on the left, of indeterminate direction on the right) situated laterally on the lip of the pouch. It would appear probable that the mid-ventral tuft is in this specimen displaced backwards into the pouch zone, resulting in a secondary splitting of the whorl as the pouch cavity and lips developed.

## Family MACROPODIDAE.

## Subfamily POTOROINAE.

## BETTONGIA LESUEUR GRAII Gould.

*Material*.—10643—a male (length of head and body 175 mm.); Bernier Island, Shark Bay; pres. O. H. Lipfert.

*Head and Neck*.—The head and neck show in the arrangement of the tracts a pattern similar to that described for *Potorous tridactylus apicalis* (Boardman, 1946a). A small divergent interval, occasioned by the presence of a divergent centre on the margin of the upper eyelid just lateral of the medial canthus, occurs immediately in front of the eye. On the left side a supernumerary centripetal whorl, clockwise, lies on the oblique ridge formed by the meeting of the backwardly directed facial stream and the forwardly directed stream from the lateral neck whorl.

*Trunk*.—Dorsally and laterally the thorax has the hairs primitively disposed; the arrangement of the tracts ventrally is conditioned by the presence of an axillary divergent interval as in *Bettongia penicillata*. Over the flank the primitive caudoventral trend is maintained. The inguinal region is, with minor variations, as described and figured for *Bettongia penicillata* (Boardman, 1946a, Fig. 33).

*Limbs*.—A convergent point associated with a reversed field is present on the postaxial margin of the forearm somewhat distal of its middle.

## Subfamily MACROPODINAE.

## SETONIX BRACHYURUS Quoy and Gaimard.

*Material*.—M.310—a male (length of head and body 240 mm.); Western Australia.

*Setonix brachyurus* differs in only minor details from the account given of *Wallabia agilis* (Boardman, 1946a). There is no small whorl in the vicinity of the lateral canthus. The convergent centre on the crown shows clockwise whorling. The nuchal whorled system is probably bilaterally doubled but the hairs are locally disturbed so that the details of tract formation are obscured. The tracts in the groin are somewhat simpler than in *Wallabia bicolor* (Boardman, 1943b, Fig. 25) in that the convergent interval between the scrotum and cloacal eminence is absent.

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